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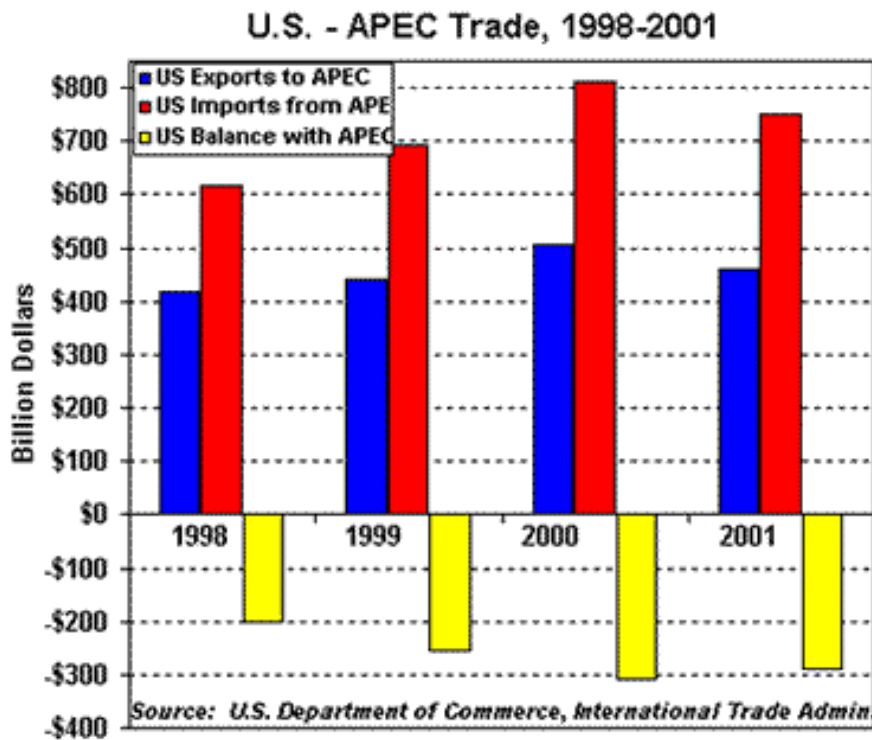
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Regional Overview: Asia-Pacific Economic Cooperation (APEC)

The following presents highlights of the energy situation in the group of countries belonging to the Asia-Pacific Economic Cooperation (APEC) forum. Current members are: [Australia](#), [Brunei](#) Darussalam, [Canada](#), [Chile](#), People's Republic of China ([China](#)), [Hong Kong](#) (China), [Indonesia](#), [Japan](#), Republic of Korea ([South Korea](#)), [Malaysia](#), [Mexico](#), [New Zealand](#), [Papua New Guinea](#), [Peru](#), Republic of the [Philippines](#), [Russia](#), [Singapore](#), Chinese Taipei ([Taiwan](#)), [Thailand](#), the [United States](#), and [Vietnam](#).

BACKGROUND

The Asia-Pacific Economic Cooperation (APEC) forum was established in 1989 to promote economic growth and integration in the Pacific region. Originally an informal group of 12 Asia-Pacific economies (including the United States), APEC has expanded to 21 members with the admission of the People's Republic of China (PRC), Hong Kong, and Taiwan in 1991; Mexico and Papua New Guinea in 1993; Chile in 1994, and Peru, Russia and Vietnam at the annual meeting held in November 1998 in Kuala Lumpur, Malaysia. The most recent APEC economic leaders meeting was held October 26-27, 2002 in Los Cabos, Mexico.



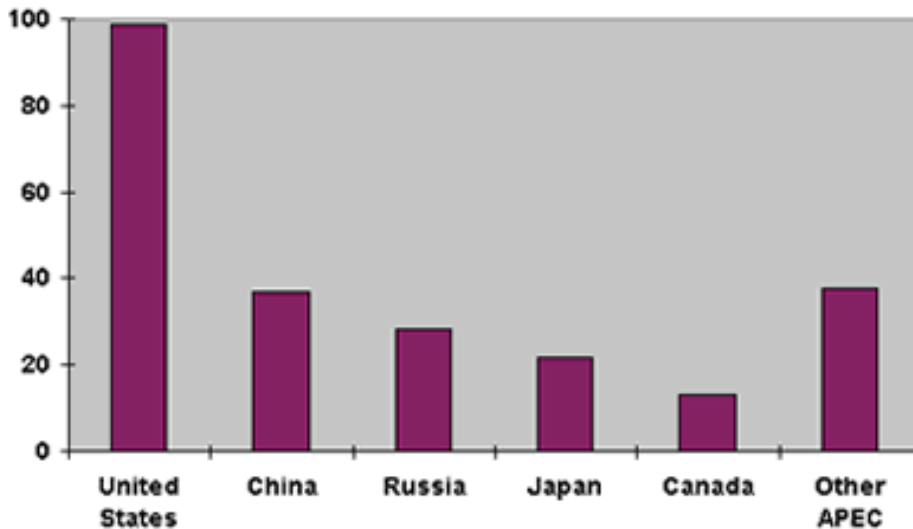
The current 21 APEC members account for 62% of world economic activity and 42% of world population ([see Table 1](#)). The United States has extensive trade relations with its partners in APEC (especially Canada, Japan, Mexico, and China). In 2001, the United States ran a trade deficit of \$290 billion with the other 20 APEC members. In that year, nearly 63% (\$460 billion) of U.S. merchandise exports were sold to APEC members, while 66% (\$750 billion) of U.S. merchandise imports

originated in APEC countries. APEC also accounts for nearly 60% of world energy consumption -- a share that is likely to rise in coming decades. APEC energy imports also are projected to increase sharply through 2020, with much of this gain coming from China (PRC) and the United States. Natural gas and electricity demand are expected to grow particularly rapidly during this time period, although oil and coal should maintain large shares of APEC's total energy consumption.

APEC has identified economic policy goals for broad cooperation to enhance regional integration in 13 areas, including energy. An Energy Working Group, established in 1990, has sponsored several meetings of APEC energy ministers. The Group develops cooperative projects (such as a regional database on energy supply and demand) and exchanges views on such issues as coal utilization, technology transfer, and resource exploration and development. APEC works closely with the Asia Pacific Energy Research Center (APEREC) in Tokyo, Japan. One of the major initiatives of the Energy Working Group has been the promotion of natural gas infrastructure integration in Southeast Asia, a goal endorsed at the Energy Ministers Meeting in October 1998. The Asian Development Bank has estimated that as much as \$70 billion in investment for Asian natural gas infrastructure will be required over the next 15 years.

APEC Energy Consumption, 2000

(Quadrillion British Thermal Units)



ENERGY CONSUMPTION

In 2000, APEC countries collectively consumed 236 quadrillion British thermal units (Btu) of energy (60% of the world's total) and generated over 3.9 billion metric tons of energy-related carbon emissions (61% of the world's total). Oil is the dominant fuel ([see Table 2](#)), accounting for 38% of 2000 total energy consumption in APEC, followed by coal and natural gas

(27% and 22%, respectively). In 2000, APEC members collectively consumed around 58% of the world's oil, 57% of the world's natural gas, and 67% of the world's coal. The high percentage for coal is mainly due to China (PRC) and the United States, which combined accounted for around 49% of the world's total coal consumption in 2000.

ENERGY RESOURCES AND SUPPLY

APEC members contain about 14% of the world's proven reserves of crude oil and nearly 43% of the world's natural gas reserves ([see Table 3](#)). They also have 63% of proven coal reserves, 54% of the world's capacity for refining crude oil into petroleum products, and 58% of the world's electric generating capacity (including more than half of the world's nuclear power). In 2000, APEC members produced around 38% of the world's petroleum, 62% of the world's natural gas, and 64% of the world's coal.

IMPORT DEPENDENCY

Overall, the APEC region is a net importer of energy. In 2000, APEC's 21 members had net imports of over 27 quadrillion Btus. Overall, the region is a small net exporter of coal; a net exporter of natural gas, (due largely to Russian gas exports to Western Europe); and a large net importer of oil. The United States, Japan, and South Korea are the region's largest net importers of energy; Russia, Canada, Indonesia, Australia, and Mexico are the largest net exporters of energy.

Table 1. Economic and Demographic Indicators for APEC Countries

| Gross Domestic Product* (GDP) | | | Per Capita GDP, 2001E (U.S. Dollars) | Population, 2002E (Millions) |
|--|----------------------|-----------------|---|------------------------------------|
| 2001E (Billions of U.S. Dollars) | Real GDP Growth Rate | | | |
| | 2001 Estimate | 2002 Projection | | |

| | | | | | |
|------------------------------------|----------|-------|-------|----------|---------|
| Australia | \$579 | 2.4% | 3.7% | \$18,227 | 19.5 |
| Brunei | \$5 | 3.3% | 2.9% | \$15,805 | 0.4 |
| Canada | \$705 | 1.5% | 3.4% | \$22,729 | 31.9 |
| Chile | \$67 | 2.8% | 2.7% | \$4,314 | 15.5 |
| China (PRC) | \$1,157 | 7.3% | 7.6% | \$907 | 1,284.3 |
| Hong Kong, China | \$162 | 0.2% | 1.8% | \$24,017 | 7.3 |
| Indonesia | \$145 | 3.3% | 3.4% | \$680 | 231.3 |
| Japan | \$4,148 | -0.4% | -0.6% | \$32,635 | 127.0 |
| Malaysia | \$88 | 0.4% | 3.9% | \$3,679 | 22.7 |
| Mexico | \$611 | -0.3% | 1.5% | \$6,045 | 103.4 |
| New Zealand | \$50 | 1.8% | 3.0% | \$12,764 | 3.9 |
| Papua New Guinea | \$4 | -2.5% | 2.5% | \$718 | 5.2 |
| Peru | \$54 | 0.2% | 3.6% | \$2,073 | 27.9 |
| Philippines | \$71 | 3.2% | 4.0% | \$925 | 84.5 |
| Russia | \$319 | 5.0% | 4.1% | \$2,214 | 145.0 |
| Singapore | \$86 | -1.9% | 3.8% | \$20,732 | 4.5 |
| South Korea | \$423 | 3.3% | 6.0% | \$8,866 | 48.3 |
| Chinese Taipei (Taiwan) | \$282 | -1.9% | 3.3% | \$12,666 | 22.5 |
| Thailand | \$115 | 1.8% | 4.0% | \$1,837 | 62.4 |
| United States | \$10,082 | 0.3% | 2.3% | \$36,243 | 280.6 |
| Vietnam | \$33 | 6.8% | 6.4% | \$412 | 81.1 |
| Total* | \$19,186 | | | \$7,353 | 2609.2 |

All GDP figures use market exchange rates.

Source: WEFA Outlooks 3Q2002, CIA World Factbook 2002

Table 2. Energy Consumption and Carbon Dioxide Emissions in APEC Countries, 2000

| | Energy Consumption | | | | | | | Carbon Dioxide Emissions ² (Million metric tons of carbon) |
|-----------------------------|-------------------------------|-----------|-------------|------|---------|---------------|----------------------------------|--|
| | Total (Quadrillion Btu) | Petroleum | Natural Gas | Coal | Nuclear | Hydroelectric | Renewable Energy ¹ | |
| Australia | 4.9 | 35% | 17% | 44% | 0% | 4% | 1% | 97 |
| Brunei | 0.1 | 41% | 60% | 0% | 0% | 0% | 0% | 1 |
| Canada | 13.1 | 31% | 26% | 11% | 6% | 28% | 1% | 158 |
| Chile | 1.0 | 48% | 19% | 13% | 0% | 18% | 1% | 15 |
| China (PRC) | 36.7 | 27% | 3% | 64% | 0.4% | 6% | 0% | 775 |
| Hong Kong, China | 0.8 | 67% | 3% | 20% | 0% | 0% | 0% | 15 |
| Indonesia | 3.9 | 56% | 31% | 8% | 0% | 4% | 2% | 69 |
| Japan | 21.8 | 52% | 13% | 16% | 14% | 4% | 1% | 314 |

| | | | | | | | | |
|--------------------------------|-------|-----|-------|------|-----|-----|------|-------|
| Malaysia | 1.9 | 50% | 41% | 5% | 0% | 4% | 0% | 30 |
| Mexico | 6.2 | 63% | 24% | 4% | 1% | 6% | 2% | 103 |
| New Zealand | 0.8 | 35% | 26% | 4% | 0% | 30% | 6% | 9 |
| Papua New Guinea | 0.05 | 74% | 9% | 0.1% | 0% | 17% | 0% | 1 |
| Peru | 0.6 | 63% | 3% | 5% | 0% | 30% | 0.3% | 8 |
| Philippines | 1.2 | 60% | 0.03% | 17% | 0% | 7% | 16% | 20 |
| Russia | 28.1 | 19% | 51% | 20% | 5% | 6% | 0% | 451 |
| Singapore | 1.7 | 97% | 3% | 0% | 0% | 0% | 0% | 32 |
| South Korea | 7.9 | 57% | 10% | 20% | 13% | 1% | 0% | 115 |
| Chinese Taipei (Taiwan) | 3.8 | 47% | 6% | 35% | 10% | 2% | 0% | 69 |
| Thailand | 2.6 | 58% | 25% | 13% | 0% | 2% | 1% | 45 |
| United States | 98.8 | 39% | 23% | 23% | 8% | 3% | 4% | 1,571 |
| Vietnam | 0.7 | 51% | 6% | 19% | 0% | 23% | 0% | 11 |
| Total | 236.3 | 38% | 22% | 27% | 6% | 6% | 2% | 3,908 |

¹ This includes the share of net geothermal, solar, wind, and wood and waste electric power generation. For the United States, it also includes the shares of: (a) the consumption of geothermal, solar, and wood and waste energy not used for electricity generation; and (b) electricity imports from Mexico that are derived from geothermal energy.

² Includes carbon dioxide emissions from the consumption of petroleum, natural gas, and coal, and from the flaring of natural gas. Tons of carbon can be converted to tons of carbon dioxide gas by multiplying by 3.667.

(s) = Value less than 0.05%.

Note: Percentages may not add to 100% because of independent rounding.

Source: Energy Information Administration, International Energy Annual 2000.

Table 3. Energy Supply Indicators--APEC Countries

| | Fossil Fuel Proved Reserves | | | Fossil Fuel Production, 2000 | | | Electric Generating Capacity, 1/1/99 (Million kilowatts) | Crude Oil Refining Capacity, 1/1/02 (Thousand barrels per day) |
|-------------------------|-------------------------------------|---|-------------------------------------|--|---------------------------------------|---------------------------|--|--|
| | Crude Oil, 1/1/02 (Million barrels) | Natural Gas, 1/1/02 (Trillion cubic feet) | Coal, 12/31/99 (Billion short tons) | Petroleum ¹ (Million barrels per day) | Dry Natural Gas (Trillion cubic feet) | Coal (Million short tons) | | |
| Australia | 3,500 | 90.0 | 90.5 | 0.8 | 1.1 | 3 | 43 | 848 |
| Brunei | 1,350 | 13.8 | 0 | 0.2 | 0.3 | 0 | 0.4 | 9 |
| Canada | 4,858 | 59.7 | 7.3 | 2.8 | 6.5 | 76 | 111 | 1,944 |
| Chile | 150 | 3.5 | 1.3 | 0.02 | 0 | 0 | 10 | 205 |
| China (PRC) | 24,000 | 48.3 | 126.2 | 3.2 | 1.0 | 1,314 | 294 | 4,528 |
| Hong Kong, China | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Indonesia | 5,000 | 92.5 | 5.9 | 1.5 | 2.4 | 74 | 21 | 993 |
| Japan | 59 | 1.4 | 0.9 | 0.1 | 0.1 | 3 | 229 | 4,786 |
| Malaysia | 3,000 | 75.0 | 0 | 0.8 | 1.5 | 0.2 | 13 | 515 |
| Mexico | 26,941 | 29.5 | 1.3 | 3.5 | 1.3 | 11 | 39 | 1,525 |

| | | | | | | | | |
|--------------------------------|---------|---------|-------|------|------|-------|-------|--------|
| New Zealand | 90 | 2.1 | 0.6 | 0.05 | 0.2 | 4 | 8 | 106 |
| Papua New Guinea | 238 | 12.2 | 0 | 0.1 | 0 | 0 | 1 | 0 |
| Peru | 323 | 8.7 | 1.2 | 0.1 | 0.1 | 0.5 | 6 | 182 |
| Philippines | 178 | 3.7 | 0.4 | 0 | 0 | 1 | 12 | 420 |
| Russia | 48,573 | 1,680.0 | 173.1 | 6.7 | 20.6 | 281 | 203 | 5,435 |
| Singapore | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1,259 |
| South Korea | 0 | 0 | 0 | 0.1 | 0 | 5 | 50 | 2,560 |
| Chinese Taipei (Taiwan) | 4 | 2.7 | 0 | 0 | 0 | 0.1 | 26 | 920 |
| Thailand | 516 | 12.7 | 1.4 | 0.2 | 0.7 | 20 | 19 | 682 |
| United States | 22,045 | 177.4 | 273.7 | 9.1 | 19.0 | 1,074 | 795 | 16,785 |
| Vietnam | 600 | 6.8 | 0.2 | 0.3 | 0 | 10 | 5 | 0 |
| Total | 141,425 | 2,320.0 | 683.9 | 29.4 | 54.8 | 3212 | 1,901 | 43,701 |

¹ Includes crude oil, natural gas plant liquids, other liquids, and refinery processing gain.

Sources: Crude Oil and Natural Gas Reserves: PennWell Publishing Co., Oil & Gas Journal, 12/24/01. Crude Oil Refining Capacity: PennWell Publishing Co., Oil & Gas Journal, 12/24/01. All Other Data: Energy Information Administration, International Energy Annual 2000.

LINKS

Links to other U.S. government sites:

[U.S.-APEC Home Page \(U.S. State Department\)](#)

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